

## **CLAIM LISTING**

Applicants request that, pursuant to this amendment, the following listing of claims replace all prior versions and listings of claims in the instant application. (**The re-numbering of the claims was entered by the Examiner in the Notice of Allowance, in which Claims 1-27, 29, and 30 were renumbered as Claims 1-29.**)

### **Listing of Claims:**

1. (Previously Presented) A method for supporting a user application in a grid environment comprising the steps of:

providing a customer service application configured to register a plurality of hosts operating in a plurality of grids for performing host-based operations and to convey control signals for synchronizing a plurality of ghost agents operating in said plurality of grids for performing customer service operations on one of the plurality of hosts, the customer service application having a service interface configured to prevent unauthorized access to the customer service application;

wherein said plurality of hosts are software objects for an application domain distributed within a grid environment, said grid environment being a distributed computing system that includes a plurality of hardware and software components;

receiving a problem indication relating to one of said plurality of hosts;

identifying at least one of the plurality of hosts operating within a grid of said grid environment;

associating a ghost agent within said grid with said at least one identified host, said ghost agent being configured to include at least one of a test engine, a ghost log, and a controller, wherein the test engine loads test routines into said ghost agent, executes the test routines in response to received test commands, and analyzes within said ghost agent results of the executed test routines, wherein the ghost log stores log data internally within said ghost agent and, periodically or at irregular intervals, deposits the log data to

a local location, after which the ghost agent clears the ghost log, wherein said controller accepts control signals from the customer service application and controls at least one of a life-span of said ghost agent and resources used by said ghost agent, and wherein said ghost agent is configured to replicate at least one action of said at least one identified host within said grid;

retrieving log data stored at the local location and conveying the retrieved log data to a ghost log repository using at least one data-reaping object;

recording data relating to said replicated actions;

responding to said problem based at least in part upon said recorded data

moving said at least one identified host from said grid to another grid within said grid environment; and,

in response to said moving of said at least one identified host, moving said ghost agent from said grid to said another grid.

2. (Previously Presented) The method of claim 1, wherein said receiving step receives said problem indication from a user, wherein said associating step is performed responsive to receiving said problem indication, wherein said at least one identified host of said associating step represents said user, and wherein said responding step further comprises using said recorded data to determine actions of said user that resulted in said problem.

3. (Original) The method of claim 1, further comprising the step of:

providing a customer service interface, wherein a customer service representative utilizes said customer service interface during said responding step.

4. (Original) The method of claim 1, said responding step further comprising the step of:

executing a test using said ghost agent, wherein said test utilizes said recorded

data.

5. (Original) The method of claim 1, wherein said responding step further comprises the step of:

performing a debugging operation using said ghost agent, wherein said debugging operation utilizes at least one replicated action.

6. (Original) The method of claim 1, further comprising the step of:

comparing said recorded data with at least one operational threshold provided by said ghost agent, such that said recorded data includes results of said comparing step.

7. (Previously Presented) The method of claim 1, further comprising the steps of:

automatically detecting a problem within said user application; and

automatically generating said problem indication responsive to said detecting step.

8. (Original) The method of claim 1, further comprising the step of:

responsive to receiving said problem indication, automatically routing application activity from an area of said grid environment in which said problem occurred to an alternative area of said grid environment.

9. (Original) The method of claim 1, further comprising the step of:

automatically fixing said problem based at least in part upon said recorded data.

10. (Original) The method of claim 1, further comprising the steps of:

selecting more than one of said plurality of hosts; and

for each selected host, repeating said associating step, said recording step, said responding step, and said moving steps.

11. (Original) The method of claim 1, further comprising the steps of:  
identifying a location that is external to said ghost agent; and  
conveying said recorded data to said identified location.
12. (Original) The method of claim 1, further comprising the steps of:  
moving said at least one identified host within said grid environment; and  
moving said ghost agent within said grid environment in accordance with a  
movement of said host.
13. (Previously Presented) The method of claim 1, further comprising the steps of:  
disassociating said ghost agent from said at least one identified host; and  
associating said ghost agent with a different host within said grid.
14. – 29. (Cancelled)